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NEW SPECIES AND SUBSPECIES OF CYCHRINI (CARABIDÆ-COLEOPTERA) FROM WESTERN NORTH AMERICA

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Scaphinotus elevatus neomexicanus Van Dyke, new subspecies.

This subspecies differs from the typical *elevatus* by being of a deep violet black color; by being proportionately narrower; the prothorax smaller, less than two-thirds as long at the middle as broad, with a broad somewhat convex and cordate disc, the lateral wings abruptly elevated from the sides, not gradually as in the other, but little arched and with the margin almost equally thickened throughout; the elytra with the margins only moderately explanate in the humeral region and rather narrow elsewhere, the disc broadly convex and quite flattened at the middle, and the striæ deep and closely crenulately punctured. When viewed from behind, the contrast in outline between this and the typical form is most marked. Length 19 mm., breadth 8.5 mm.

Type, female in my collection, collected at Cloudcroft, Sacramento Mountains, New Mexico, altitude 8000 feet, July 5, 1917, by Professor W. M. Wheeler and by him kindly presented to me.

In color, this insect is much like the subspecies *tenebricosus* Roesch., but in appearance and structure shows a closer approach to *Scaphinotus mexicanus* Bates. To neither *Scaphinotus snowi* Leconte nor *Scaphinotus kelloggi* Dury, both of which are also from New Mexico, does this form show any close relationship. So very distinct, indeed, does it appear that one might consider it entitled to specific standing. In view of the known variability of *Scaphinotus elevatus* Fab. and because of the belief that certain other varieties approach it, I think that it is best to place it as I have done.

Scaphinotus catalinæ Van Dyke, new species.

Elliptical in shape, moderately flattened; black with upper surface a dull violet. Head narrow and moderately elongate, twice as long as broad, one-half breadth of prothorax, supraorbital setæ prominent; eyes moderately prominent; antennæ reaching middle of body, apical half of fourth joint finely pilose; gular setæ present. Prothorax two-fifths as long at middle as broad at widest point; apex emarginate; base with middle third transverse and outer portions projecting obliquely backwards and upwards; sides moderately explanate and elevated in front, gradually increasing in both width and elevation posteriorly and ending in a broad, posteriorly directed wing, which is but little elevated above the disc; lateral margin thickened, broadly arcuate in front and oblique, straight and convergent posteriorly, the lateral setigerous puncture at the middle and slightly within the margin; the disc moderately convex, with median longitudinal line distinctly impressed, rather finely strigulose anteriorly, coarsely, irregularly and sparsely punctate posteriorly. Elytra over three times as long as the prothorax at its middle, seven-tenths as broad as long; elliptical, humeral area broadly rounded; margin broad at humeri and of moderate width elsewhere; the disc fairly convex; striæ fourteen in number, distinctly impressed, irregular at sides and towards apex and rather coarsely closely punctured. Beneath coarsely, sparsely punctured at sides, with two anal setæ on each side, the posterior coxal plates with the posterior setæ present and the anterior absent. Length 14 mm., breadth 7 mm.

Male with first three tarsal joints of anterior legs broadly dilated and entirely papillose beneath.

Type, male in my collection, secured near the top of Mt. Lemon, Catalina Mountains, Arizona, July, 1912. Allotype female and one paratype male and paratype female are also in my collection and other paratypes are in the collection of Cornell University and the California Academy of Sciences.

This insect differs from its closest relative, *Scaphinotus vandykei* Roesch., by being less shining; by having the prothorax narrower, with the lateral wings both narrower and less elevated, the punctuation of the disc sparser and more confined to the posterior half; the elytra more elliptical, the humeral area more evenly rounded, the sides less parallel, and the striæ definitely defined. *Scaphinotus roeschkei* Van Dyke somewhat approaches this species particularly as regards the elytra but it has a flatter, less winged and more densely uniformly punctured prothorax. In the table given by Dr. Roeschke¹, *catalinæ* should be placed between *roeschkei* and *vandykei*.

¹ "Monographie der Carabiden—Tribus Cychrini," by Dr. med. Hans Roeschke, Anns. Mus. Nat. Hungaric, V (1907).

Scaphinotus johnsoni Van Dyke, new species.

Black, subopaque, head and prothorax slightly æneous, elytra chocolate brown with margins a metallic green. Head slightly less than twice as long as broad, front convex and somewhat irregular anteriorly, genæ distinct and obtusely notched in front of the eyes, the eyes moderately prominent. Prothorax distinctly broader than long, slightly more than one-half as broad as elytra, apex shallowly emarginate and narrowly margined, sides broadly rounded in front, thence almost straight and converging to near base and from there parallel to posterior angles, the side margins narrow and reflexed, broader in front, the disc almost flat and finely wrinkled, the anterior and posterior transverse and median longitudinal impressions distinct though shallow. Elytra seven-tenths as broad as long, elliptical, slightly convex, margin moderate and moderately reflexed, disc with nineteen striæ, the third, sixth, ninth and twelfth somewhat interrupted and formed by the more or less complete coalescence of elongate punctures in the center of previously broad intervals, the striæ between the above regular, the thirteenth to the nineteenth irregular, stria punctures barely discernible, the intervals convex, the inner continuous, the outermost irregular and catenulate in places. Beneath moderately smooth, posterior coxal plates with both basal and subapical setigerous punctures. Length 18 mm., breadth 6 mm.

Type, a unique female with right anterior leg and most of antennæ lacking. It was collected in the Olympic Mountains of Washington by Professor Meany of the University of Washington and given to the late Professor O. B. Johnson, who very kindly presented it to me.

This very interesting species is a member of the subgenus *Brennus*, the second species to be recorded from the State of Washington, all others of that subgenus heretofore secured from that state being referable to *Scaphinotus marginatus* Fisch. It differs from all phases of this last-mentioned species not only by being quite subopaque but by having a peculiar type of elytral sculpture. It has at least five more elytral striæ, every third one formed by the extension and confluence of the punctures of the former broad intervals; has more regular median striæ and lacks the definite stria punctures which in the other so often produce a crenulation or interruption of the intervals.

Scaphinotus subtilis bullatus Van Dyke, new subspecies

This subspecies differs from the typical *subtilis* by being very much larger and more subopaque; by having the sides of prothorax posterior to the most dilated portion, almost straight and convergent posteriorly; the elytra quite bullous and with both striæ and punctures very fine, the striæ hardly perceptible in some specimens. Male, length 23 mm., breadth 10 mm.; female, length 26 mm., breadth 12 mm.

Male with tarsal joints of anterior legs long and but little dilated, the first with an elliptical papillose area at apical third beneath and the second with an elliptical papillose area occupying the median three-fourths beneath, the following joints without papillæ.

Type, male, and female allotype in my collection, taken by myself at the mouth of Roaring River, South Fork of Kings River Cañon, Fresno County, California, altitude 5000 feet, June 4, 1910. Several paratypes collected at the same time and place are also in my collection.

Scaphinotus subtilis grandis Van Dyke, new subspecies

Similar to the preceding in size and general opaqueness but having the elytra proportionately broader and with the striæ poorly defined, the punctures, however, very distinct and more or less arranged in rows which average 24, or double the number found in the typical form, due to rows of punctures being developed in the intervals as well as in the striæ. In the larger females there is a tendency for the striæ to completely disappear and for the punctures to lose their regular arrangement, particularly laterally. Male, length 23 mm., breadth 11 mm.; female 26 mm., breadth 13 mm.

Male with tarsal joints elongate but slightly more robust than in preceding subspecies, but with the first and second joints of anterior pair of legs papillose as in that.

Type, male, and allotype, female, in my collection, collected by Mr. Ralph Hopping and by him kindly presented to me. The specimens were captured at Cedar Creek, Tulare County, California, June 10-20, 1905. Several other specimens, paratypes, agreeing with the above are in Mr. Hopping's collection. A number of specimens of the same size as the typical *subtilis* but with the evident sculpturing of *grandis*, smaller phases of the same in fact, are also in the collection of Mr. Hopping and myself.

Scaphinotus subtilis Schaum is undoubtedly an offshoot of *Scaphinotus striatopunctatus* Chaud., the latter restricted to the coastal area of middle California, the former ranging along the western flanks of the Southern Sierras. The typical *subtilis* is the somewhat depauperized phase which dwells in the warmer and less humid foothill region, *bullatus* and *grandis* phases which have worker higher and farther into the mountains. *Grandis* shows the closest approach to the parent stock, *striatopunctatus*.

Scaphinotus longiceps Van Dyke, new species

Elongate, head very much lengthened, antennæ and legs of moderate length, black, shining, the elytra with a faint purplish color in good light. Head narrow, cylindrical, three times as long as broad, one-fourth longer than prothorax and one-half its width, portion back of eyes two-fifths entire length of head; genæ moderately prominent, front with medial longitudinal convex area and two deep lateral sulci, vertex and occiput shallowly transversely wrinkled; eyes rather small and almost flat; antennæ reaching beyond middle of body, the scape not reaching posterior margin of eyes. Prothorax slightly shorter than broad, one-half width of elytra, apex slightly lobed at middle and finely marginated, anterior angles somewhat projecting and obtusely pointed, side margins finely and evenly marginated, fairly straight and diverging backwards for first fourth, thence rounded and convergent until near base where suddenly sinuate, the hind angles prominent, acute and with rounded apices, the propleuræ plainly observed from above; disc with anterior and posterior transverse impressions well defined, median longitudinal impression deep, the area on either side very convex and quite smooth. Elytra with breadth somewhat more than two-thirds of length (8 mm. to 11 mm.), elongate oval, fairly convex, rather finely and evenly marginated, the disc with fourteen deep and finely punctate striæ on each elytron, the intervals convex and with an area of broken and contorted lines between fourteenth striæ and lateral margin. Beneath moderately smooth, posterior coxal plates with both basal and subapical setigerous punctures. Length 19 mm., breadth 8 mm.

Male with terminal palpal joints narrowly securiform; the first three tarsal joints of front pair of legs not perceptibly dilated, the first with a few squamæ at the extreme apex and the second and third with a small squamose area on the apical half.

Type, a unique male collected in the interior of Humboldt County, California, May 15, 1901, by Mr. F. W. Nunenmacher, and now in my collection.

This remarkable species belongs in the subgenue *Neocychnus* of Roeschke, in association with *Scaphinotus angulatus* Harris and *Scaphinotus behrensi* Roeschke. It differs from the other two species, and in fact from all the Cychrini, in having a very long, narrow and cylindrical head, three times as long as broad. It also has a much smaller prothorax than either of the two species associated with it.

Scaphinotus angulatus maritimus Van Dyke, new subspecies

This subspecies differs from the true *angulatus* in being jet black, with but the faintest tint of purple, the true species being of a brilliant copper color.

Type female in my collection, collected by myself in the forests near Port Angeles, Washington, May 25, 1907. Two other specimens, paratypes, collected by Mr. Joseph Slevin at Melbourne, Wash., July 29, 1911, and Olympic National Forest, August 3, 1911, are in the collection of the California Academy of Sciences.

The following table will separate the members of the subgenus *Neocychnus* Roeschke:

Head but twice as long as broad, front more or less cristate, prothorax moderately large.

Each elytron with fourteen complete, regular, deep and finely punctured striæ, the anterior part of lateral margin of prothorax slightly crenate,

Entire upper surface a metallic purple.....*angulatus* Harris.

Entire insect black.....*angulatus maritimus* new subspecies.

Each elytron with from seventeen to twenty shallow, moderately deeply punctured crenulate and more or less interrupted striæ, the anterior part of lateral margin of prothorax distinctly crenate, black with elytra tinged with purple.....

.....*behrensi* Roeschke.

Head three times as long as broad, front convex, not cristate, prothorax small, glossy black.....*longiceps* new species.

Scaphinotus angulatus Harris in its more typical or metallic phase is found in western British Columbia including Vancouver Island, the Puget Sound basin of Washington and the Willamette Valley of Oregon. The black phase, *maritimus*, has been found at Port Angeles, Washington, and in the wet belt west of the Olympic Mountains and Coast Range of Washington as at Hoquiam and Lake Quinalt. *Scaphinotus behrensi* Roeschke lives in the coastal area from Myrtle Point, Oregon, to northern Sonoma County, California. The third species, *Scaphinotus longiceps* new species, has been found so far only in the interior of Humboldt County, California.

Onthophilus lecontei Horn. In Zoe, Vol. III, 1893, p. 4, I reported this species, under the name of *Tribalister marginellus* Lec., in my list of the "Histeridæ Observed in San Diego County." This error arose from the fact that a number of the species collected at that time were wrongly identified for me. At Poway, where I took my specimens, the species appears to be very rare. They were taken at an elevation of 700 feet, under stones in damp places. More recently the species was taken at Salada Beach, San Mateo County, by the late L. R. Reynolds, but under what conditions was not stated. The latter specimen shows some sculptural differences from those taken in San Diego County. The type locality is Fort Tejon, the species being described by Dr. Horn from a single specimen, so the Salada Beach record extends the area of distribution considerably.

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